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Abstract

PURPOSE:To make it possible to grow high quality regular mixed crystals and a super lattice structure, by supplying the chloride of a group III element, forming an absorbing layer, and repeating a process for supplying a group VI element on a substrate crystal for a specified time. CONSTITUTION:A substrate crystal 11 is put in a reaction chamber 9. The temperature in the chamber is increased to a growth temperature in a PH3 stream. When the growth temperature is reached, HCl and PH3 are supplied into a reaction chamber 3. After a specified time, the crystal 11 is moved into the reaction chamber 3. After an InP buffer layer is grown by about 1 mum, the crystal 11 is returned into the reaction chamber 9 again. The supply of PH3 into the reaction chamber 3 is stopped, and an atmosphere including only InCl is made to remain. Then the crystal 11 is moved and exposed to the InCl. After the InCl is absorbed, the crystal 11 is returned into the reaction chamber 9. The crystal 11 is moved into the reaction chamber 3. This cycle is repeated by 10 times. Thus the high quality regular mixed crystals and a super lattice structure can be grown.